(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 December 2000 (07.12.2000)

PCT

(10) International Publication Number
WO 00/74007 A1

(51) International Patent Classification[7]: G07F 7/08, 7/10

(21) International Application Number: PCT/US00/14592

(22) International Filing Date: 26 May 2000 (26.05.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/322,670 28 May 1999 (28.05.1999) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 09/322,670 (CIP)
Filed on 28 May 1999 (28.05.1999)

(71) Applicant *(for all designated States except US)*: **UTM SYSTEMS CORPORATION** [US/US]; 10900 Northeast 8th Street, Suite 1110, Bellevue, WA 98004-4454 (US).

(72) Inventors; and

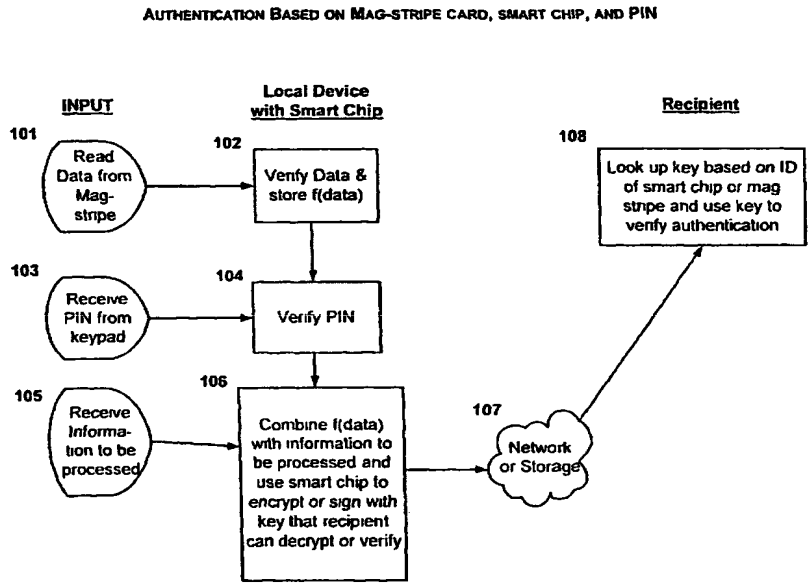
(75) Inventors/Applicants *(for US only)*: **LEE, Robert** [CA/US]; 717 140th Avenue Southeast, Bellevue, WA 98005 (US). **HONEY, Thomas, E.** [US/US]; 2760 - 76th Avenue Southeast, Apartment 403, Mercer Island, WA 98040 (US).

(74) Agents: **HALEY, Jeffrey, T.** et al.; Graybeal Jackson Haley LLP, Suite 350, 155 108th Avenue Northeast, Bellevue, WA 98004-5901 (US).

(81) Designated States *(national)*: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW.

[Continued on next page]

(54) Title: NETWORK AUTHENTICATION WITH SMART CHIP AND MAGNETIC STRIPE



(57) Abstract: A method for using a device that incorporates a magnetic stripe card reader head with a smart chip and can be connected to a computer network such as the Internet to authenticate a user to a remote server on the network. The method involves reading data from the magnetic stripe (101), verifying data from the magnetic stripe (102), receiving a personal identification number entered on a keyboard on the device (103), verifying the personal identification number (104), encrypting with a key contained in the smart chip a piece of data for sending to the remote server along with information identifying the source (106), and, on the remote server, looking up an appropriate key for decryption based on the identification of the source and verifying the authentication if the decryption is successful (108). Variations on the method include verifying the mag-stripe data on a remote server instead of within the smart chip, verifying the PIN on a remote server instead of within the smart chip, and adding various kinds of information to be sent to the server along with the essential elements required for authentication. The method may be used to authenticate digital signatures or signature guarantees, or for transactions using debit cards or credit cards. If the reader device with a smart chip is owned by a merchant, the merchant can further authenticate himself with a personal identification number, and the card holder will swipe his card into the device and identify himself with a second personal identification number.

WO 00/74007 A1

(84) **Designated States** *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— *With international search report.*

— *Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.